

ABRAMOV, V.A., red.

[Program dealing with problems in the economics of socialist agricultural enterprises for schools of economics, study groups and seminars in party education] Programma po voprosam ekonomiki sotsialisticheskikh sel'skokhoziaistvennykh predpriyatii dlia ekonomicheskikh shkol, krushkov i seminarov seti partiinogo prosveshcheniia. Moskva, 1957. 18 p. (MIRA 11:10)
(Agriculture--Economic aspects)

ABRAMOV, Viktor Aleksandrovich; BENYUMOV, O.M., redaktor; ISLANT'YEVA, P.G.,
tekhnicheskiiy redaktor

[A new planning system and economic initiative on collective farms]
Novyi poriadok planirovaniia i khoziaistvennaia initsiativa kolkho-
zov. Moskva, Izd-vo "Znanie," 1957. 31 p. (Vsesoiuznoe obshchestvo
po rasprostraneniuiu politicheskikh i nauchnykh znanii. Ser. 3.
Ekonomika sel'skogo khoziaistva. Vyp.2, no.3) (MIRA 9:8)
(Collective farms)

ABRAMOV, V.A.; ALEKSEYEV, A.M.; AL'TER, L.B.; ARAKELIAN, A.A.; BAKLANOV, G.I.;
 HASOVA, I.A.; BLYUMIN, I.G.; BOGOMOLOV, O.T.; BOR, M.Z.; BRUGEL',
 E.Ya.; VEYTSMAN, N.R.; VIKENT'YEV, A.I.; GAL'TSOV, A.D.; GERTSOVSKAYA,
 B.R.; GLADKOV, I.A.; DVORKIN, I.N.; DRAGILEV, M.S.; YEFIMOV, A.N.;
 ZHAMIN, V.A.; ZHUK, I.N.; ZAMYATNIN, V.N.; IGNAT'YEV, D.I.; IL'IN,
 M.A.; IL'IN, S.S.; IOFFE, Ye.A.; KAYE, V.A.; KAMENITSER, S.Ye.;
 KATS, A.I.; KLIMOV, A.G.; KOZLOV, G.A.; KOLGANOV, M.V.; KONTOPOVICH,
 V.G.; KRAYEV, M.A.; KRONROD, Ye.A.; LAKHMAN, I.L.; LIVANSKAYA, F.V.;
 LOGOVINSKAYA, R.L.; LYUBOSHITS, L.I.; MALYSH, A.I.; MENZHINSKIY,
 Ye.A.; MIKHAYLOVA, P.Ya.; MOISEYEV, M.I.; MOSKVIN, P.M.; NOTKIN,
 A.I.; PARTIGUL, S.P.; PERVUSHIN, S.P.; PETROV, A.I.; PETRUSHOV, A.M.;
 PODGORNOVA, V.M.; RABINOVICH, M.A.; RYVKIN, S.S.; RYNDINA, M.N.;
 SAKSAGANSKIY, T.D.; SAMSONOV, L.N.; SMEKHOV, B.M.; SOKOLIKHIN, S.I.;
 SOLLERTINSKAYA, Ye.I.; SUDARIKOV, A.A.; TATAR, S.K.; TEREENT'YEV,
 P.V.; TYAGAY, Ye.Ya.; FEYGIN, Ye.G.; FIGURNOV, P.K.; FRUMKIN, A.B.;
 TSYRLIN, L.M.; SHAMBERG, V.M.; SHAPIRO, A.I.; SHCHENKOV, S.A.;
 NYDNL'MAN, B.I.; KKHIN, P.W.; MITROFANOVA, S., red.; TROYANOVSKAYA, N.,
 tekhn.red.

[Concise dictionary of economics] Kratkii ekonomicheskii slovar'.
 Moskva, Gos.izd-vo polit.lit-ry, 1958. 391 p. (MIRA 11:7)
 (Economics--Dictionaries)

BADAR'YAN, G.G.; TYUTIN, V.A.; CHEREKUSHIN, S.D.; ZUZIK, D.T.;
 KHODASEVICH, B.G.; FRAYER, S.V.; GUSAROV, Ye.I.; KAZANSKIY,
 A.M.; KASSIROV, L.N.; KARAYEV, S.A.; ABRAMOV, V.A.;
 VASIL'YEV, N.V.; BUGAYEV, N.F.; SAPIL'NIKOV, N.G.; KASTORIN,
 A.A.; RUDNIKOV, V.N.; YAKOVLEV, V.A.; PEREMYKIN, V.I.;
 ISAYEV, A.P.; KUZ'NICHIEV, N.N.; IL'IN, S.A.; PRONIN, V.A.;
 LUK'YANOV, A.D.; SHAKHOV, Ya.K.; IL'ICHEV, A.K., kand. sel'-
 khoz. nauk; KOGAN, A.Ya.; TSYNKOV, M.Yu.; BABIY, L.T.;
 GORBUNOV, I.I.; KOVALEV, A.M.; ROMANCHENKO, G.R.; BRODSKAYA,
 M.L., red.; IVANOVA, A.N., red.; GUREVICH, M.M., tekhn. red.;
 TRUKHINA, O.N., tekhn. red.

[Economics of agriculture] Ekonomika sotsialisticheskogo sel'-
 skogo khoziaistva; kurs lektsii. Moskva, Sel'khozizdat, 1962.
 710 p.

(Agriculture—Economic aspects)

(MIRA 15:10)

ABRAMOV, V.A.; RUMYANTSEV, A.F.; CHAYKIN, P.I.; ABATURIN, L.V.;
GAVRILOV, V.I.; ALTAYSKIY, I.P.; KAMINSKIY, A.Ye.; SUKACH,
P.V.; VASIL'YEV, V.N.; OBOLENSKIY, K.P.; SAVEL'YEV, Ye.A.;
MOTOV, S.I.; RUSAKOV, G.K.; IVANOV, F.G.; PISKUNOV, V.,
red.; POLYAKOVA, N., red.; MUKHIN, Yu., tekhn. red.

[Economics of agricultural enterprises; textbook] Ekonomika
sel'skokhoziaistvennykh predpriatii; uchebnoe posobie. Mo-
skva, Gospolitizdat, 1962. 510 p. (MIRA 15:9)

1. Kommunisticheskaya partiya Sovetskogo Soyuz. Vysshaya
partiynaya shkola.

(Farm management)

BADIR'YAN, G.G., prof.; VASIL'YEV, N.V., prof.; KOTOV, G.G., prof.;
RUDAKOVA, Ye.A., prof.; BRAGINSKIY, B.I., doktor ekon.nauk;
GUMEROV, M.N., dots.; ROMANCHENKO, A.V., doktor ekon. nauk;
ABRAMOV, V.A., dots.; ALTAYSKIY, I.P., kand. ekon. nauk;
GAVRILOV, V.I., dots.; RAFIKOV, M.M., kand.ekon. nauk;
VINOKUR, R.D., dots.; RUSAKOV, G.K., dots.; LAVRENT'YEV,
V.N., dots.; GORELIK, L.Ya., red.; PONOMAREVA, A.A., tekhn.
red.

[Economics, organization and planning of agricultural produc-
tion] Ekonomika, organizatsiya i planirovanie sel'skokho-
ziaistvennogo proizvodstva. Moskva, Ekonomizdat, 1963. 607 p.
(MIRA 16:41)

(Agriculture--Economic aspects)

ABRAMOV, V.A., dots., red.; KOKOSHKO, A.G., red.; MARTYNOVA, M.N.,
tekhn. red.

[Advanced practices in agriculture] Peredovoi opyt v sel'-
skom khoz'istve; sbornik statei. Pod red. V.A.Abramova.
Moskva, Izd-vo VPSH i AON pri TsK KPSS, 1963. 142 p.

(MIRA 17:3)

1. Kommunisticheskaya partiya Sovetskogo Soyuza. Vysshaya
partiynaya shkola. Kafedra ekonomiki sel'skogo khozyaystva.

ABR/MOV, V.A.; RUMYANTSEV, A.F.; CHAYKIN, I.I.; ABATURIN, L.V.;
GAVRILOV, V.I.; ALTAYSKIY, I.P.; KAMINSKIY, A.Ye.;
SUKACH, A.F.; VASIL'YEV, V.N.; OBOLENSKIY, K.P.;
SAVEL'YEV, V.A.; RUSAKOV, G.K.; IVANOV, F.G.; POLYAKOVA, N.,
red.; MUKHIN, Yu., tekhn.red.

[Economics of agricultural enterprises] Ekonomika sel'sko-
khoziaistvennykh predpriatii; uchebnoe posobie. Izd.2.,
dop. Moskva, Politizdat, 1963. 527 p. (MIRA 17:1)

1. Kommunisticheskaya partiya Sovetskogo Soyuz. Vysshaya
partiynaya shkola.

(Agriculture--Economic aspects)

ABRAMOV, V.A.

Activity of the technical and economic committee of the Moscow
City Economic Council. Izv. tekhn.-ekon. inform. Gos. nauch.-
issl. nauch. i tekhn. inform. 17 no.9:83-85 S '64
(MIRA 18:1)

L 2827-66 EWT(1)

ACCESSION NR: AP5016169

UR/0051/65/018/006/0974/0978

AUTHOR: Abramov, V. A. *my, es*

533.9 001.1

64
61
B

TITLE: On the regions of applicability of different ionization equilibrium equations *21.4/15*

SOURCE: Optika i spektroskopiya, v. 18, no. 6, 1965, 974-978

TOPIC TAGS: ionized plasma, ionization phenomenon, electron recombination, ion density

ABSTRACT: Formulas for the ionization equilibrium are considered for a quasineutral plasma consisting of neutral unexcited atoms, electrons, and singly-charged ions. Three recombination mechanisms are considered -- paired (radiative), ternary (electron-ion-electron collision) and ternary recombination occurring in electron-ion-atom collisions. The electron velocity distribution is assumed to be Maxwellian. Unlike earlier equations, the equation used for the rate of change of ion concentration includes a term that describes recombination occurring in collisions between the electrons, the ions, and the atoms. In addition to being significant in a weakly ionized plasma, this recombination process plays an important role in the establishment of the ionization state of readily ionized impurities in the plasma. For a hydrogen plasma, the regions in which the Saha formula is

Card 1/2

L 2827-56

ACCESSION NR: AP5016169

greater, because of the lower ionization potential of cesium. Orig. art. has: 1 figure and 22 formulas. "The author thanks V. I. Kogan for a useful discussion."

ASSOCIATION: None

SUBMITTED: 07Mar64

ENCL: 00

SUB CODE: 01, ME

NR REF SOV: 002

OTHER: 004

BVK
Card 2/2

ABRAMOV, V.A.; KOGAN, V.I.

Emanation of a finite volume of nonequilibrium plasma. Dokl. AN
SSSR 164 no.5:1008-1011 O '65. (MIRA 18:10)

1. Submitted March 11, 1965.

ABRAMOV, V.A.

Fields of application for various equations describing
ionization equilibrium. Opt. i spektr. 18 no.6:974-978
Je '65. (MIRA 18:12)

L 04754-67 EWT(1) IJP(c) AT
ACC NR: AP6025949

SOURCE CODE: UR/0051/66/021/001/0019/0026

AUTHOR: Abramov, V. A.; Smirnov, B. M.

ORG: none

TITLE: Electron-ion recombination in plasma

SOURCE: Optika i spektroskopiya, v.21, no. 1, 1966, 19-26

TOPIC TAGS: ionized plasma, electron plasma, plasma charged particle, plasma density, plasma dynamics, plasma electron temperature, plasma interaction, plasma temperature, ion recombination, electron recombination, recombination coefficient, recombination emission, recombination radiation

ABSTRACT: The authors consider a plasma recombination process which involves the capture of an electron by an ion following the collision of an electron with another electron within the ion's field. One of the parameters describing certain kinetic processes in plasma is the electron-ion recombination coefficient, normally related to both electron and ion densities in plasma. At low electron densities, this coefficient is independent of electron concentration, whereas at higher electron densities the process of electron collisions in the ion fields becomes predominant, with the subsequent collisions occurring between the excited atom and free electrons, until the atom returns into its ground state. Since the energy changes in the captured electron

Card 1/2

UDC: 533.9

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101
B

L 04754-67

ACC NR: AP6025949

3
occur in small increments, its distribution function is described by the Fokker-Planck equation. The recombination coefficient in this case is determined by the density of free electrons. The recombination of ions with electrons following electron collisions in a high temperature plasma is essentially an irreversible process accompanied by radiation at relatively high excitation states of the atom. If ionization in plasma is negligible compared to recombinations, the electron spends the major share of the time, needed for its return to the ground state, in the upper excitation levels. Consequently, the recombination coefficient is only slightly influenced by the individual characteristics of the atom, while depending strongly on the density and temperature of the plasma. The authors were able to derive a more accurate relation of the recombination coefficient to the properties of plasma over a wide range of temperatures and pressures. The effects of radiation by the excited atoms were also accounted for. The cross section of non-elastic electron collision with an excited atom was calculated using Born's approximation. In conclusion, the authors express their gratitude to M. A. Leontovich, V. I. Kogan and O. B. Firsov for the valuable assistance in the execution of this work. Orig. art. has: 31 formulas,

SUB CODE: 20/

SUBM DATE: 05Oct64/

ORIG REF: 010/

OTH REF: 003

Card 2/2

1ST AND 2ND ORDER		PROCESSES AND PROPERTIES INDEX		3RD AND 4TH ORDER	
BC		Preparation of mercury organic compounds by direct action of metallic mercury. A. E.		143	
<p>KRETOV and V. A. ABRAMOV (J. Gen. Chem. Russ., 1937, 7, 1872-1873). — CHPhBr-CN in XOMeEt and Hg (8 hr. at 40°) yield a mixture of phenylbromo-mercuriacetonitrile, m.p. 187°, and of its decomp. product, dicyanodibenzyl, m.p. 237°. R. T.</p>					
A.S.B.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION					
1ST ORDER		2ND ORDER		3RD ORDER	
1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48
49	50	51	52	53	54
55	56	57	58	59	60
61	62	63	64	65	66
67	68	69	70	71	72
73	74	75	76	77	78
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85	86	87	88	89	90
91	92	93	94	95	96
97	98	99	100	101	102
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109	110	111	112	113	114
115	116	117	118	119	120
121	122	123	124	125	126
127	128	129	130	131	132
133	134	135	136	137	138
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145	146	147	148	149	150
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163	164	165	166	167	168
169	170	171	172	173	174
175	176	177	178	179	180
181	182	183	184	185	186
187	188	189	190	191	192
193	194	195	196	197	198
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205	206	207	208	209	210
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217	218	219	220	221	222
223	224	225	226	227	228
229	230	231	232	233	234
235	236	237	238	239	240
241	242	243	244	245	246
247	248	249	250	251	252
253	254	255	256	257	258
259	260	261	262	263	264
265	266	267	268	269	270
271	272	273	274	275	276
277	278	279	280	281	282
283	284	285	286	287	288
289	290	291	292	293	294
295	296	297	298	299	300

USSR/Chemistry - Synthesis
Chemistry - Dienes

Oct 48

"Diene Synthesis With Cyclones," V. A. Abramov,
Kazan State U Imeni V. I. Ul'yanov-Lenin, 4 pp

"Dok Ak Nauk SSSR" Vol LXII, No 5

Studies action of ethylene dienophiles in the form
 $CH_2=CH-X$ where X is a noncarbonyl atom, on a
cyclohexene, an anisylcyclohexene, an acetylcyclohexene and an
acetylcyclohexene, using vinyl haloid deriva-
tives, etc., as dienophiles. It seems probable
that steric factors and a steric structure of
cyclohexenes play an important part in these.

53/49127

USSR/Chemistry - Synthesis (Contd)

Oct 48

Processes. Submitted by Acad A. Ye. Arbutov,
22 Jul 48.

53/49127

ANRAMOV, V.; KARP, G.; ARBUZOV, A.Ye., akademik.

Mechanism of the Arbuzov rearrangement. Dokl.AN SSSR 91 no.5:1095-1098 Ag
'53. (MLBA 6:8)

1. Akademiya nauk SSSR (for Arbuzov). 2. Kazanskiy khimiko-tekhnologicheskiy institut im. S.M.Kirova. (Isomerism) (Esters)

*Kazan Chemical Technological
Inst. named S. M. Kirov*

PIEREL'MAN, V.I.; NEKRASOV, B.V., redaktor; ABRAMOV, V.A., redaktor;
YASHKE, Ye.V., redaktor; LUR'E, M.S., tekhnicheskii redaktor.

[Brief chemistry manual] Kratkii spravochnik khimika. Pod obshchei
red. B.V.Nekrasova. Izd. 3-e, ispr. i dop. Moskva, Gos. nauchno-
tekhn. izd-vo khim. lit-ry, 1954. 557 p. (MLRA 7:12)

1. Chlen-korrespondent AN SSSR (for Nekrasov).
(Chemistry--Handbooks, manuals, etc.)

PEREL'MAN, V.I.; NEKRASOV, B.V., redaktor; ABRAMOV, V.A., redaktor;
YASHKE, Ye.V., redaktor; LUR'YE, M.S., tekhnicheskiy redaktor

[Concise handbook of chemistry] Kratkii spravochnik khimika.
Pod obshchei red. B.V.Nekrasova. Izd. 5-oe, stereotip. Moskva,
Gos. nauchno-tekhn. izd-vo khim. lit-ry, 1956. 559 p. (MLRA 9:7)

1. Chlen-korrespondent AN SSSR (for Nekrasov)
(Chemistry--Handbooks, manuals, etc.)

ABRAMOV, V.A., red.

[Classified plan of literature to be published during 1959 by the State Publishing House for Chemical Literature "Goskhimizdat."] Tematicheskii plan izdaniia Gosudarstvennogo nauchno-tekhnicheskogo izdatel'stva khimicheskoi literatury "Goskhimizdat" na 1959 god. Moskva, M-vo kul'tury SSSR, 1958. 18 p. (MIRA 13:1)

1. Vsesoyuznoye ob'yedineniye knizhnoy torgovli.
(Bibliography--Chemistry)

ABRAMOV, V. A.

Kholodil'nyye Mashiny i Sooruzheniya, (by) N. V. Dem'yakov (1; V. A. Abramov.
Moskva, Transzheldorizdat, 1959.

434 P. Diags., Graphs, Tables.

Bibliography : P. 430-431.

ACCESSION NR: AP4038430

S/0294/64/002/002/0160/0169

AUTHORS: Abramov, V. A. (Moscow); Tarasov, Yu. A. (Moscow)

TITLE: Emission of a cesium plasma

SOURCE: Teplofizika vy*sokikh temperatur, v. 2, no. 2, 1964, 160-169

TOPIC TAGS: cesium plasma, plasma instability, magnetohydrodynamics, magnetohydrodynamic generator, ionization, recombination phenomena, emission spectrum

ABSTRACT: In view of the importance of cesium as an additive to the working gas of a magnetohydrodynamic generator, the line and continuous emissions of a cesium plasma are analyzed in the temperature range 3,000--4,000K. The analysis is simplified by regarding the system as having two levels, by assuming the plasma to be optically thin, and by neglecting effects of ionization with recombination. The deviations from the Boltzmann law are evaluated. Allowance for

Card

1/52

ACCESSION NR: AP4038430

the quasistatic action of the ions is shown to increase the intensity of a given line by about 18%. The total energy yield due to the line radiation is determined for different densities and temperatures. The energy of the recombination radiation and the cross sections for radiative recombination of the Cs atoms are evaluated for several levels. It is shown that the recombination radiation produces a much lower energy flux than the line emission. This agrees with the results for a hydrogen plasma obtained by L. M. Biberman et al. (Optika i spektroskopiya v. 14, 330, 1963). "In conclusion the authors are grateful to Ye. P. Velikhov, V. I. Kogan, and G. V. Sholin for numerous discussions and also to L. M. Biberman for many valuable remarks. Orig. art. has: 20 formulas and 5 tables.

ASSOCIATION: None . /

SUBMITTED: 04Nov63

DATE ACQ: 09Jun64

ENCL: 02

Card

2/8

ABRAMOV, V.A. (Moskva); TARASOV, Yu.A. (Moskva)

Properties of an argon-cesium plasma in an electric field. Toplofiz.
vyp. temp. 2 no.3:313-320 My-Je '64. (MIRA 17:8)

AERAMOV, V.A. (Moskva); TARASOV, Yu.A. (Moskva)

Radiation from a cesium plasma. Teplofiz. vys. temp. 2 no. 2:163-169
Mr-Ap '64. (MIRA 17:6)

ANDC(a)/ASD(a)-5/BSD/ASD(f)-3/ASD(p)-3/AFETR/RAEM(a)/RAEM(c)/ESD(ga)/ESD(t)/
AS(mf)-2 AT

ACCESSION NR: AP4042456

S/0294/64/002/003/0313/0320

AUTHOR: Abramov, V. A. (Moscow); Tarasov, Yu. A. (Moscow)

TITLE: Properties of argon-cesium plasma in an electric field

SOURCE: Teplofizika vy*sokikh temperatur, v. 2, no. 3, 1964, 313-320

TOPIC TAGS: plasma heating, magnetohydrodynamics, plasma conductivity, argon plasma, cesium plasma, electron temperature, MHD generator

ABSTRACT: To determine the efficiency gain that would result from increasing the conductivity of a magnetohydrodynamic-generator plasma stream above its equilibrium value (with the aid of an electric field), the authors estimate the electric field necessary to heat electrons in an argon-cesium plasma to 300--400K. The energy lost in elastic collisions by the cesium ions and atoms and by the argon atoms, as well as the energy lost by inelastic collisions, is taken into account. Some of the losses, such as radiation losses, that

Card 1/58

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ACCESSION NR: AP4042456

3

must be included in the energy balance were evaluated by the authors elsewhere (Teplofizika vysshokikh temperatur, v. 2, No. 2, 1964). The values of the optimal plasma conductivity are obtained for different cesium concentrations and argon pressures in the electron temperature range 3000--4000K. Some possible causes of plasma instability are mentioned. "In conclusion the authors are grateful to Ye. P. Velikhov, V. I. Kogan, and G. V. Sholin for numerous useful discussions." Orig. art. has: 3 figures, 7 formulas, and 2 tables.

ASSOCIATION: None

SUBMITTED: 05Jul63

ENCL: 03

SUB CODE: ME

NO REF SOV: 002

OTHER: 004

Card 2/5

L 45622-65

ACCESSION NR: AP5006465

ASSOCIATION: None

SUBMITTED: 10Jun64

ENCL: 00

SUB CODE: ME

NR REF SOV: 001

OTHER: 006

Card *SL* 2/2

ACC NR: ~~48372-66~~ EPF(n)-2/EWA(h)/EMI(1)/ETC(f)/ENG(m) IJP(c) AT

AP5026977

SOURCE CODE: UR/0020/65/164/005/1008/1011

AUTHOR: Abramov, V. A.; Kogan, V. I.

ORG: none

TITLE: Study of a finite volume of nonequilibrium plasma ^{2/}

SOURCE: AN SSSR. Doklady, v. 164, no. 5, 1965, 1008-1011

TOPIC TAGS: inhomogeneous plasma, plasma radiation, spectral energy distribution

ABSTRACT: The authors show that when determining the losses to radiation from a finite volume of a plasma, with simultaneous allowance for the nonequilibrium population of the levels and the reabsorption of the radiation, there is no need for a rigorous approach such as used by R. Post (Symposium of Plasma Dynamics (Clavier, ed.), 1960, p. 30), and that it is sufficient to determine the integral flux of the outgoing quanta, for which simple and convenient formal solutions can be obtained. This conclusion is demonstrated for a two-level plasma in a finite volume. The dependence of the number of quanta emitted on the dimensions of the system is determined for both radiation proportional to the volume of the plasma and the radiation proportional to the surface area. Limiting formulas are presented for three types of radiation coming uniformly from the entire volume, surface (Planck) radiation, and instantaneous volume radiation. The approximate ranges of the parameters of the three types of radiation are indicated. This report was presented by Academician M. A. Leontovich. Orig. art. has: 1 figure and 13 formulas.

SUB CODE: 20/ SUBM DATE: 08Feb65/ ORIG REF: 003/ OTH REF: 006

Curd 1/1 CC

UDC. 535.2

S/191/61/000/001/011/015
B101/B205

AUTHOR: Abramov, V. B.

TITLE: Two-stage molds for hydraulic molding of plastics

PERIODICAL: Plasticheskiye massy, no. 1, 1961, 53

TEXT: Two types of two-stage molds have been suggested for the purpose of increasing the effectivity of hydraulic presses. The upper and the lower stage are opened simultaneously by means of a rack gear, after which the products are knocked out. Likewise, the molds are closed simultaneously. This type has been introduced by the Karacharovskiy zavod plastmass (Karacharovskiy Plant for Plastics). Fig.1 shows a type for knocking out the product at the bottom, and Fig.2 shows one for knocking out the product at the top. There are 2 figures.

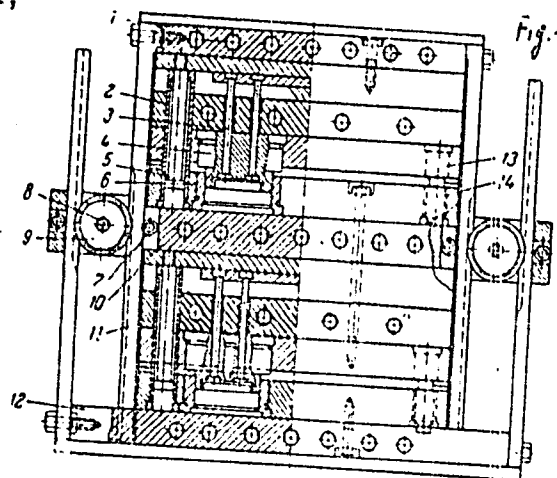
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Card 1/3

Two-stage molds for hydraulic...

S/191/61/000/001/011/015
B101/B205

Legend to Fig.1. 1: Upper plate;
2: knock-out bush; 3: knock-out pin;
4: punches; 5: pull rod; 6: die
block; 7: locating pin; 8: axis;
9: gear; 10: middle plate; 11: rack;
12: lower plate; 13: leader bush;
14: leader pin.

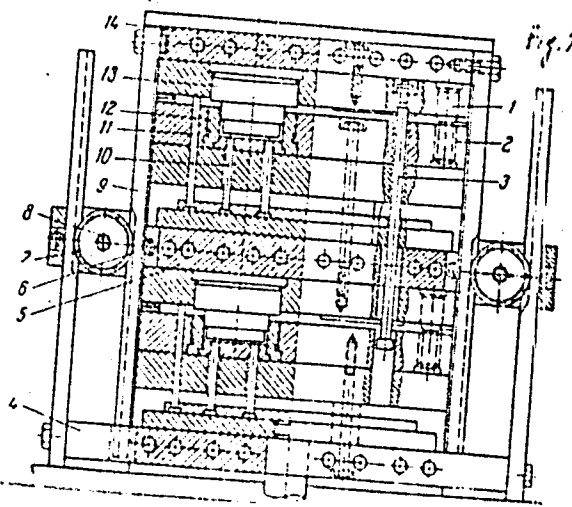


Card 2/3

Two-stage molds for hydraulic...

S/191/61/000/001/011/015
B101/B205

Legend to Fig.2. 1: Leader pin;
2: leader bush; 3: pull rod;
4: lower plate; 5: middle plate;
6: locating pin; 7: gear; 8: axis;
9: rack; 10: knock-out pin;
11: return pin; 12: die block;
13: punches; 14: upper plate.



Card 3/3

ABRAMOV, V.D., Inzh.

Use of hydrophobic coatings for increasing contamination resistance
of electric insulators. Energetik no.9.34-35 S 16%.

(MIRA 17:10)

1. GERCHIKOV, N.P., ABRAMOV, V.F.
2. USSR (600)
- 4 cattle
7. Results of crossing Yaroslav cattle with East Frisian Cattle on the breeding farm, "Red October." Sov. zootekh. 7 no. 6 (1952) zootekhnika
9. Monthly List of Russian Accessions, Library of Congress, August, 1952.
Unclassified.

USSR/Farm Animals. Cattle

Q-2

Abs Jour : Ref Zhur - Biol., No 19, 1958, No 88045

Author : Abramov V.F.

Inst :

Title : Certain Pressing Problems of Breeding Work

Orig Pub : Sovkhoznoye proiz-vo, 1957, No 8, 42-46

Abstract : On establishing large artificial insemination stations, and on the growing, utilization and quality-testing of the offspring of the bulls employed in such stations.

Card : 1/1

ABRAMOV, V. F., Aspirant

"An Investigation of Effective Variants of Mining Systems of Storing and Divided-Stope Ore Extraction." Cand Tech Sci, Moscow Inst of Nonferrous Metals and Gold imeni M. I. Kalinin, 29 Nov 54. (VM, 16 Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (11)

SO: Sum. No. 521, 2 Jun 55

SOV/118-58-1-4/16

AUTHORS: Abramov, V.F. and Kaplunov, D.R. Engineers

TITLE: The Use of Powerful Scraper Winches in the Delivery of Ores
(Primeneniye moshchnykh skrepernykh lebedok na vypuske rudy)

PERIODICAL: Mekhanizatsiya trudoymekhniki i tyazhelykh rabot, 1958, Nr 1,
pp 15-17 (USSR)

ABSTRACT: The workers of the Gosudarstvennyy institut gornokhimicheskogo syr'ya (State Institute of Chemical Raw Material Mining) in cooperation with the workers of the mine imeni S.M. Kirov of the "Apatit" kombinat (the "Apatite" Combine), are studying the conditions for the utilization of powerful scraper winches in mines. In 1955/56 scraper winches of the type SEL-55 (capacity - 55 kw) and "Kaliy-4" (capacity - 75 kw), of which the operating capacity ranged between 100 and 400 tons per shift, were used. Practice showed, however, that operating expenses were too high. Timing of operations and technical analysis have proved that a further improvement of technical and economic indices can be achieved only by applying more powerful scraper winches with a power capacity ranging from 100 to 120 kw. The use of powerful scraper winches necessitates the construction of dependable

Card 1/2

SOV/118-58-1-4/16

The Use of Powerful Scraper Winches in the Delivery of Ores

equipment, but for lack of specialized plants which could produce experimental models, the designing of efficient scrapers is hampered. There are 3 diagrams, 2 tables, and 1 Soviet reference.

1. Earth moving equipment--Performance
2. Hoists--Applications

Card 2/2

127-58-1-27/28

AUTHORS: Abramov, V.F., Candidate of Technical Sciences; Nedin, V.V.,
Doctor of Technical Sciences, Professor

TITLE: S.L. Iofin, A.V. Kulikov, V.V. Kulikov, A.D. Polishchuk.
Level, Forced Caving Method (S.L. Iofin, A.V. Kulikov, V.V.
Kulikov, A.D. Polishchuk. Prinuditel'noye etazhnoye obru-
sheniye)

PERIODICAL: Gornyy Zhurnal, 1958, Nr 1, pp 78-79 (USSR)

ABSTRACT: This is a review of the book "The Level, Forced Caving
Method" published by the Metallurgizdat in 1957. The re-
view was written by two separate authors, Abramov and Nedin.

AVAILABLE: Library of Congress

Card 1/1 1. Mining engineering-USSR 2. Mines-Operation

ABRAMOV, V F

127-58-5-3/30

AUTHORS: Abramov, V.F., Candidate of Technical Sciences, Kaplunov, D.R., and Yakovlev, O.A., Mining Engineers

TITLE: Comparative Estimate of Ore Blasting by Deep Shot-Holes in an Apatite Mine (Sravnitel'naya otsenka otboyki rudy glubokimi skvazhinami na apatitovom rudnike)

PERIODICAL: Gornyy Zhurnal, 1958, Nr 5, pp 10-14 (USSR)

ABSTRACT: The apatite-nepheline mine imeni Kirov has a thick, flat sloping deposit which outcrops at the sides of the mountains. The average thickness of the ore lens varies from 150 to 200 m, and its extension is about 2,200 m. The deposit is mined by the system of forced level caving with ore blasting by large explosive charges. This system of mining had drawbacks. Therefore, a block in the northern part of the Kukisvumchorr deposit was used to conduct experiments in blasting by means of deep shot-holes; up to 50 m long. The block was divided into chambers and pillars with dimensions of 40 to 57.5 m. Altogether 350,000 tons of ore was broken in the chambers and about 400,000 tons in the interchamber pillars. The net cost of the ore from

Card 1/2

127-58-5-3/30

Comparative Estimate of Ore Blasting by Deep Shot-Holes in an Apatite Mine

the experimental block turned out to be approximately the same as in the ordinary method of applying large charges. However, the technico-economical indices of the deep hole method can be considerably improved, when the proposed scheme of hole distribution in the block, shown in Figure 3, is applied. It is concluded that this method will prove to be more efficient and will replace the latter in the mines of the Apatit Combine.

There are 3 figures and 2 tables.

ASSOCIATION: GIGKhS

AVAILABLE: Library of Congress

Card 2/2

1. Mines-Blast effects

AUTHORS: Abramov, V. F., Kaplunov, D. R. 307/64-58-6-1/15

TITLE: Experience in Working the Scraping Stage at the
Mine imeni S. M. Kirov of the "Apatit"
Kombinat (Opyt ekspluatatsii gorizonta skroperovaniya na
rudnike imeni S. M. Kirova kombinata "Apatit")

PERIODICAL: Khimicheskaya promyshlennost', 1958, Nr 6, pp 354-357 (USSR)

ABSTRACT: In almost all mines the working of blocks in thick deposits has so far been, and still is being, done with a level of screening. This method has a number of shortcomings which prevent further improvement. The drawbacks are enumerated. In the mine mentioned by the title the cooperators of GIGKhS and the workers of the mine and kombinat jointly tested huge scraper windlasses of the levels of scraping. These tests make it possible to draw some conclusions and give recommendations. At the crosscuts 1, 2, and 3 the windlasses SEL -55 with a capacity of 55 kW were used, at crosscuts 4 and 5 windlasses "Kaliy-4" with 75 kW capacity. It was found that the closeness of the land mine arrangement characterized by the relation - tons of discharged ore to one land mine - depends on the granulometric composition of the discharged

Card 1/2

SOV/64-58-6-2/15

Experience in Working the Scraping State

at the Mine imeni S. M. Kirov of the "Apatit" Kombinat

ore. A table of calculations regarding the technical and economic characteristics is added as well as a table of the cost of exploitation of material with the same granulometric composition on the level of screening, and data for a comparison between levels of scraping and screening, with cost calculations for previous minings. According to these, total outlays for a discharge working with level of scrapings are smaller than those for one working with level of screening and the level seems to be more convenient. In the mine mentioned by the title it was found that in the case of ore cutting with vertical interstices three per cent of the material show deviations from the standard size. There are 5 figures and 3 tables.

ASSOCIATION: Gosudarstvennyy institut gornokhimicheskogo syr'ya
(State Institute of Mining-Chemical Raw Materials)

Card 2/2

SOV/127-59-4-23/27

30(4)

AUTHORS: Kulikov, A.V., Kulikov, V.V. and Abramov, V.F.,
Candidates of Technical Sciences.

TITLE: M.A. Al'tshuler, The Underground Mining of Large
Deposits of Hard Ores. (M.A. Al'tshuler, Podzemnaya
razrabotka moshchnykh zalezhey krepkikh rud.)

PERIODICAL: Gornyy zhurnal, 1959, Nr 4, pp 77-78 (USSR)

ABSTRACT: This is the review of the above book, published
by the Metallurgizdat in 1958.

Card 1/1

S/064/60/000/01/11/024
B022/B008

AUTHORS: Afanas'yev, N. A., Candidate of Technical Sciences,
Abramov, V. F., Candidate of Technical Sciences

TITLE: Methods of Improving the System of Underground Mining in
Apatite Mines

PERIODICAL: Khimicheskaya promyshlennost', 1960, No. 1, pp. 51 - 57

TEXT: An increase of the apatite production to the 2.7 fold is envisaged within the framework of the coming Seven-year Plan. The kombinat "Apatit" ("Apatit" Kombinat) is the supplier of the Apatit concentrate. The apatite deposits have a thickness of 150-200 m, and come to the surface on the slopes of the Kukisvumchorr, Yukspor, and Rasvumchorr mountains. The Protod'yakonov hardness number of the individual layers is given. The system of breaking layers by means of blasting is used for the mining of the deposits. This system shows, however, a number of drawbacks. In the course of improving the mining process, the volume and cost of the drilling of blast holes at a varied arrangement of the blasting charges (Table 1), and the cost in rubles per ton of the mining by blasting in the rudnik

Card 1/3

Methods of Improving the System of Underground Mining in Apatite Mines S/064/60/000/01/11/024
B022/B008

imeni S. M. Kirova (Mines imeni S. M. Kirov) in dependence on the height of the subdrift (Table 2) are mentioned. The scheme of the distribution of the blasting charges in blasting chambers or blasting drifts is also mentioned (Fig. 1). The extension, cost, and volume of the drilling of blast holes related to 1000 tons of ore deposit are mentioned (Table 2). A plan of the drilling horizon and the technical-economic principal factors of the disintegration systems for ore mining by blasting charges and deep drilling (Table 4) are also mentioned. It was also established by means of experiments carried out in 1958 that the rate of drilling can be reduced to 25 m per shift and the drilling cost by 20-25 rubles per 1 m by using the drill BA-100-P-1. The scheme of the breaking of layers with horizontal drill holes is given in Fig. 3, and the scheme for the removal of the extracted ore in Fig. 4. The principal cost and the material consumption for the removal of the ore on the shoveling- and sifting horizon are compared (Table 5). It appeared that the technical-economic factors of the first method may be greatly improved by shortening the length of the gallery from 60-70 m to 30-40 m and by improving the equipment as well as by taking appropriate measures. There are 4 figures, 5 tables,

Card 2/3

Methods of Improving the System of Underground Mining in Apatite Mines 8/064/60/000/01/11/C24
B022/B008

and 5 Soviet references.

ASSOCIATION: Nauchno-issledovatel'skiy institut gornokhimicheskogo
syr'ya (Scientific Research Institute of Chemical Raw
Materials Produced in Mining) ✓

Card 3/3

ABRAMOV, V.F.; ZENCHENKO, V.P.

Air distributors with pneumatic and electric control. Mashinostroitel'
no.9:40 S '61. (MIRA 14:10)

(Pneumatic machinery)

YERMAKOV, V.G., inzh.; ABRAMOV, V.F., inzh.

Mechanism for turning boring rods. Bezop.truda v prom. 5 no.12:31
D '61. (MIRA 15:1)

1. Trest Artemgeologiya.

(Boring machinery)

GUSHCHIN, V.V.; YELIN, S.N.; STEKHNOVSKIY, A.V.; ABRAMOV, V.F., kand.
tekhn.nauk

New technical methods and equipment for underground mining in
apatite mines. Gor.zhur. no.1:35-40 Ja '63. (MIRA 16:1)

1. Kombinat "Apatit" (for Gushchin, Yelin, Stekhnovskiy).
2. Gosudarstvennyy institut gorno-khimicheskogo syr'ya (for
Abramov).

(Apatite)

(Mining engineering)

ACCESSION NR: AT4013982

S/3070/63/000/000/0137/0139

AUTHOR: Abramov, V. F.; Zakharov, V. I.; Sukhodreva, I. M.

TITLE: Attachment to Diffractometer URS-50I for Determining the Orientation of Germanium and Silicon Single Crystals

SOURCE: Novy*ye mashiny*i pribory* dlya ispy*taniya metallov. Sbornik statey. Moscow, Metallurgizdat, 1963, 137-139

TOPIC TAGS: germanium crystal orientation, silicon crystal orientation, crystallographic plane, diffractometer, metal crystal, crystal orientation

ABSTRACT: The use of ionization methods for registration of reflected X-rays permits a faster determination of crystallographic orientation of single crystals. G. F. Komovskiy and L. A. Voskresenskaya applied the URS-50I diffractometer for determination of orientation of germanium single crystals, and obtained a precision up to 30', provided that deviations of the crystallographic plane from the outer face of specimen were not greater than 6°.

Card 1/6

ACCESSION NR: AT4013982

In order to obtain greater precision in the determination of orientation and to increase the limiting value of permissible deviations of the crystallographic plane, a special attachment to the diffractometer has been designed by the authors. This attachment permits a rotation of the specimen at 20 to 30 rpm about the horizontal axis and a slow rotation about the vertical axis. By combining the rotations, it is easy to pass the crystallographic plane through the goniometer axis, forming the Bragg's angle θ with the incident X-ray beam. The angle α between the crystallographic plane and the outer face of the specimen is equal to the angle of rotation about the vertical axis from the initial position to that position of the specimen where a maximum intensity of reflected X-rays is indicated by the counter of the ionization chamber, the outer face of the specimen forming the angle α with the incident X-ray beam. The attachment is illustrated in Fig. 1 of the Enclosure. The specimen is located between the rubber insert 11 and the hardened, finely finished and greased vertical face of the angle bracket 3, and slides on this face when rotated by the spindle 9 of the reduction gear 7. The angle bracket is mounted so that its vertical face is in a plane passing through the goniometer axis. X-rays from a tube with a copper anode, working at 15-20 kV and 3-4mA, fall on the specimen through a slot 1.2-1.5 mm high in the angle

Card 2/6

ACCESSION NR: AT4013982

bracket, and can have a maximum incidence angle of 40° . Remote control is provided to rotate the specimen about the horizontal axis in order to protect the operator. Fine adjustment is achieved by rotation of a handwheel on the receiver selsyn. One revolution of the handwheel produces a 6° rotation of the specimen. Rotation about the vertical axis is performed by the goniometer rotating mechanism. The described attachment permits the determination of the orientation of crystallographic planes (100), (110), (111) in monocrystalline germanium and silicon ingots when the deviation of these planes from the face planes of the ingots does not exceed $6.5; 17; 13^\circ$ and $5; 16; 13.5^\circ$ for germanium and silicon, respectively. After determination of angle α , corresponding to the maximum intensity of reflected rays, a horizontal line is scribed on the ingot along the edge of the rectangular cut-out in the angle bracket. This line is perpendicular to the line of intersection of the face plane with the crystallographic plane. The scribed line on the ingot and the value of angle α determine the orientation for slicing of the ingot in planes parallel to the selected crystallographic plane. The attachment permits handling of ingots 15 — 45 mm in diameter and 100 mm long. In serial work, total errors in determination of orientation are $\pm 15'$. Orientation time for one ingot is 5 minutes, and for checking a slice 2 minutes. Orig. art. has 1 figure.

3/6

Card

ABRAMOV, V.F.; FAYBYSHENKO, D.I.; GUSHCHIN, V.V.

Ore breaking by horizontal, fan-pattern holes at apatite mines.
Gor. zhur. no.5.19-21 My '65. (MIRA 18:5)

1. Gosudarstvennyy institut gornokhimicheskogo syr'ya, g. Lyubertsy
(for Abramov, Faybyshenko). 2. Kombinat "Apatit" (for Gushchin).

CHIEF, U.S. CUSTOMS AND BORDER PROTECTION, U.S. DEPARTMENT OF HOMELAND SECURITY

Experiment	Time	Temperature	Pressure	Concentration	Rate
1	10 min	25°C	1 atm	0.1 M	0.05
2	20 min	25°C	1 atm	0.1 M	0.10
3	30 min	25°C	1 atm	0.1 M	0.15
4	40 min	25°C	1 atm	0.1 M	0.20
5	50 min	25°C	1 atm	0.1 M	0.25
6	60 min	25°C	1 atm	0.1 M	0.30
7	70 min	25°C	1 atm	0.1 M	0.35
8	80 min	25°C	1 atm	0.1 M	0.40
9	90 min	25°C	1 atm	0.1 M	0.45
10	100 min	25°C	1 atm	0.1 M	0.50

100. 100. 100. 100. 100.

1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

ALBANY, V.G., 2nd ed. (1950) "The corner for the
plastic." Kuybyshev, 1950. 16 pp. (Kuybyshev 1st ed. 1949. 16 pp. of
the 1st ed. 1949)
(Kuybyshev 1st ed. 1949), 2nd ed. (1950, 16 pp.)

-5-

ABRAMOV, V.G., aspirant.

Corneal nerves in keratoplasty [with summary in English]. Vest. oft.
71 no.5:42-49 S-O '58 (MIRA 11:10)

1. Kafedra glaznykh bolezney (zav. - prof. T.I. Yeroshevskiy,
konsul'tant - chlen-korrespondent AN SSSR prof. N.G. Kolosov)
Kuybyshevskogo meditsinskogo instituta.
(CORNEA TRANSPLANTATION,
reinnerv. of graft (Rus))

ABRAMOV, V.G., aspirant

Problem of corneal innervation. Oft.zhur. 14 no.6:358-362 '59.

(MIRA 13:4)

1. Iz kafedry glaznykh bolezney (zav. - prof. T.I. Yeroshevskiy,
konsul'tant - chlen-korrespondent AN SSSR prof. N.G. Kolosov) Nuy-
byshevskogo meditsinskogo instituta.

(CORNEA--INNERVATION)

ABRAMOV, V.G., kand.med.nauk; PEREVEZENTSEVA, M.A., vrach

Surgical treatment of Marcus Gunn's syndrome. Oft. zhur. 16 no.4:
248-249 '61. (MIRA 14:7)

1. Iz kafedry glaznykh bolezney (zav. - prof. A.A.Bugayev) Omskogo
meditsinskogo instituta.
(EYELIDS--DISEASES)

ABRAMOV, V.G., dotsent; BUTOK, M.A., ordinator

Treatment of sympathetic ophthalmia in children. Sber. nauch.
trud. Ivan. gos. med. inst. no. 28:189-196 ' 63 (MIRA 19:1)

1. Iz kafedry glaznykh bolezney (zav. - prof. T. I. Samsonova)
Ivanovskogo gosudarstvennogo meditsinskogo instituta (rektor -
dotsent Ya. M. Romanov) i Ivanovskoy oblastnoy klinicheskoy
bol'nitsy (glavnyy vrach - zasluzhennyy vrach RSFSR A.A. Cheyda).

ABRAMOV, V.G., kand. med. nauk

Two cases of retrolental fibroplasia. Sbor. nauch. trud. Ivan.
gor. med. inst. no. 28:201-205 ' 63 (MIRA 19:1)

1. iz kafedry glaznykh bolezney (zav. - prof. A.A. Bagayev
[deceased]) Omskogo meditsinskogo instituta imeni Kalinina.

L 13027-66 EWT(1)/FMT(m)/EWT(m)/T MW/JW/JND/RM
 ACC NR: AP6029750 (A) SOURCE CODE: UR/0414/66/000/002/0003/0009

AUTHOR: Strunina, A. G. (Moscow); Abramov, V. G. (Moscow); Merzhanov, A. G. (Moscow) 58
 ORG: none B

TITLE: Dynamic regimes of a thermal explosion. IV. Experimental investigation of the thermal explosion of some substances

SOURCE: Fizika goreniya i vzryva, no. 2, 1966, 3-9

TOPIC TAGS: thermal explosion, tetryl, nitrocellulose, critical heating rate, critical temperature, *HEAT TRANSFER COEFFICIENT, HEATING*

ABSTRACT: The theoretical principles of thermal explosion postulated in previous studies of this series are verified by experiments with heating and cooling of tetryl, nitrocellulose, and DINA charges in a reaction vessel with a low heat-transfer coefficient and with a linear temperature increase in the surrounding medium. For tetryl charges with a 0.8 cm diameter and a critical temperature of 146C, the heating rate varied between 0.8 and 17.4°/hr. The explosion occurred only at heating rates above the critical heating rate (2.4°/hr); at heating rates below the critical, tetryl decomposed without an explosion. When the heating rate increased from 0.8 to 1.9°/hr, the maximum temperature increased from 5.8 to 12.2C. The critical explosion temperatures for the three explosives are given for various heating and cooling rates. Orig. art. has: 4 tables, 5 figures, and 3 formulas. [PS]

SUB CODE: 19/ SUBM DATE: 19Jan66/ ORIG REF: 009/ OTH REF: 001/ *ATD PRESS: 5066*
 Card 1/1-10 UDC: 541.427.6

L 43036-66 EWT(1)/EWP(m)/EWT(m)/1 WW/JW/JWD

ACC NR: AP6029761

(A)

SOURCE CODE: UR/0414/66/000/002/0090/0095

AUTHOR: Strubina, A. G. (Moscow); Abramov, V. G. (Moscow); Lovlya, S. A. (Moscow); Dement'yev, V. A. (Moscow)

ORG: none

78
B

TITLE: Study of the conditions of application of the thermally stable explosive No. 2 at high temperatures

SOURCE: Fizika gorennya i vzryva, no. 2, 1966, 90-95

TOPIC TAG: explosive, thermal stability, critical temperature, ~~induction period~~, ignition delay, explosive charge, critical pressure, high temperature effect, ignition, critical point

ABSTRACT: The conditions under which the thermally stable explosive No. 2¹¹ (unspecified) may be used, e.g., under elevated temperatures and pressures, in deep oil wells, were studied experimentally and theoretically. Critical ignition temperature T_* , critical induction period t_* , and critical charge diameter d_* were measured in a constant temperature reaction vessel with a layer of sand between the charge and the reactor walls. Equations were derived for calculating the critical temperatures of explosive No. 2 and for calculating the critical induction period for the explosive at any temperature. The upper temperature limit for the application of explosive No. 2 decreased with increasing charge diameter from 190 at $d = 1.6$ cm to 175°C at $d = 5.0$ cm. The experimental data are in good agreement with the calculated data. Since the induction period increased with increasing charge diameter,

Card 1/2

UDC: 541.427.6

L 43036-56

ACC NR: AP6029761

large diameter charges are not practicable. It is shown that the explosive system has a "memory effect", i.e., the self-ignition delay in charges kept at certain temperatures for a second time, $t_2 = t_{ind} - t_1$, where t_1 is the ignition delay time after the first thermostating. It is shown that the explosion energy and detonation velocity of the charge decreased with increasing residence time of the charge (in an oil well), and the sensitivity of the charge to impact increased with the residence time. Orig. art. has: 3 tables, 3 figures, and 4 formulas. [PS]

SUB CODE: 19/SUBM DATE: 21Jul65/ORIG REF: 007/ATO PRESS: 5066

Cord 2/2 20

L 25047-66 EWT(1)/EWT(m)/ENP(f)/EPF(n)-2/T/ETC(m)-6 WW/JW/WE

ACC NR: AF6012524

SOURCE CODE: UR/0062/66/000/003/0429/0437

AUTHOR: Abramov, V. G.; Gontkovskaya, V. T.; Merzhanov, A. G. 67
13

ORG: Institute of Chemical Physics, Academy of Sciences SSSR (Institut khimicheskoy fiziki Akademii nauk SSSR)

TITLE: The theory of ^{21, 44-5}thermal ignition. Communication 1. The rules of transition from autoignition to ignition ¹¹

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 3, 1966, 429-437

TOPIC TAGS: combustion, ignition, autoignition, propulsion

ABSTRACT: This paper is the second in a series attempting to evaluate analytically ignition and autoignition as limiting conditions of one and the same process. By analyzing the nonsteady state temperature field of a reacting system whose temperature is lower than that of the surrounding medium, the authors investigated the occurrence of ignition in a broad range of parameters. The upper limits of autoignition were determined. The possibility was demonstrated of dividing the total ignition delay time into an induction period and a period of heating of the entire region of autoignition. The influence of the geometry of the system on the ignition parameters is evaluated in detail. The transition from autoignition to ignition was studied for an infinite-cylinder model. Orig. art. has: 3 tables and 7 figures. [VS]

combustion 22

SUB CODE: 21/ SUBM DATE: 31Oct63/ ORIG REF: 004/ OTH REF: 003/ ATD PRESS:

Card 1/1 EW

UDC: 536.46

1234

L 29921-66 EWT(1)/EWT(m)/ETC(f)/T WW/JW/JWD/WE

ACC NR: AP6017874

SOURCE CODE: UR/0062/66/000/005/0823/0827

AUTHOR: Abramov, V. G.; Gontkovskaya, V. T.; Merzhanov, A. G.

ORG: Institute of Chemical Physics, Academy of Sciences SSSR (Institut khimicheskoy fiziki Akademii nauk SSSR)

TITLE: The theory of thermal ignition. Communication 2. The effect of external heat transfer on ignition characteristics

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 5, 1966, 823-827

TOPIC TAGS: ignition, combustion, thermal ignition

ABSTRACT: An analysis has been made of the effect of heat transfer through the walls of a vessel on the ignition characteristics of a gas reacting mixture. The reaction was assumed to be of zero order. The calculations were made for Biot numbers in the range from 0.01 to 100. Plots of the non-steady state temperature profiles showed that with decreasing Bi, the region of self-ignition is considerably expanded, but at very low Bi ignition is impossible. The induction period near the upper self-ignition limit approaches, with decreasing Bi, a value which corresponds to an adiabatic regime. Formulas were obtained for calculating the heating periods and also the minimum ignition delay time. Orig. art. has: 6 figures. [PV]

SUB CODE: 21/ SUBM DATE: 13Jan64/ ORIG REF: 002/ OTH REF: 001/ ATD PRESS: 5011

Card 1/1

UDC: 541.126+543.873

5(4) 5.1300(A), 5.4700

66435

AUTHORS: Merzhanov, A. G., Abramov, V. G., SOV/20-128-6-40/63
Dubovitskiy, F. I.

TITLE: Critical Conditions for the Thermal Explosign of Tetryl

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 6, pp 1238 - 1241
(USSR)

ABSTRACT: The processes taking place in the explosion caused by heating molten tetryl were investigated experimentally. Figure 1 shows the experiment apparatus. Hot glycerol served as heat carrier. The temperature was measured by means of a thermocouple and recorded by a potentiometer of the type EPP-09. The critical conditions of the explosion caused by heating the material, i.e. the relationship between temperature and the dimensions and constants of the explosive characteristic of the transition from the non-explosive desintegration to the explosive one, were determined. It proved possible to stop the reaction at any time by quickly replacing hot by cold glycerol. Table 1 lists the experimental data, which permit the following conclusions: The experimental value of the critical temperature T_{cr} lies between the values found when assuming purely conductive and purely

Card 1/2

66435

Critical Conditions for the Thermal Explosion of Tetryl SOV/20-128-6-40/63

convective heat transfers. Thus under experimental conditions a combined heat transfer took place. Observations by means of the television apparatus PTU-OM proved that the convection is due to the gas bubbles formed during the decomposition. This also results in a considerable increase in the initial heating over the value calculated according to N. N. Semenov's theory (Ref 5). The dependence of the induction period under critical conditions on the temperature may be represented by the equation $t_{cr} = 10^{-21.5} \cdot 49000/RT$ sec. The degree of decomposition found experimentally before the explosion set in lies in the vicinity of the calculated theoretical value of 0.49. The explosions exhibited a "soft" character in all experiments, and no impact wave formed. The influence found of the gaseous decomposition products upon the heat transfer is believed to hold for all liquid or molten explosives. There are 4 figures, 1 table, and 5 Soviet references.

PRESENTED: June 1, 1959, by V. N. Kondrat'yev, Academician

SUBMITTED: May 28, 1959

Card 2/2

11.6300
26.5200

27685
S/076/51/035/009/008/015
B106/B110

AUTHORS: Merzhanov, A. G., Barzykin, V. V., Abramov, V. G., and
Dubovitskiy, F. I.

TITLE: Thermal explosion in the liquid phase under conditions of a
purely convective heat transfer

PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 9, 1961, 2083 - 2089

TEXT: The authors tried to realize the thermal explosion of explosives in the liquid phase for the limiting case of purely convective heat transfer. The heat exchange is of such intensity that no temperature distribution takes place in the reaction zone, and the total temperature gradient falls to the wall of the reaction vessel. Such a heat exchange may be achieved by intensive artificial intermixing of the substance. Under these conditions, the heat-transfer coefficient from the reaction zone to the ambient medium may easily be measured since it is derived from the heat-transfer coefficient through the wall of the vessel. Moreover, these conditions may serve as starting point for a detailed study of the complicated convective heat transfer. Two explosives with strongly different
Card 1/5

27685

Thermal explosion in the liquid phase ...

S/076/61/035/009/008/013
B106/B110

properties were chosen for the experiments: Dina (dinitrooxydiethyl-nitramine; melting point 52.5°C) and Tetryl (melting point $\approx 130^{\circ}\text{C}$). The decomposition of Dina is a reaction of first order and only leaves a small condensed residue. The rate of heat development per unit volume is independent of the extent of transformation, and is only determined by the temperature. Under the conditions of a purely convective heat transfer, Dina represents, therefore, the simplest example for the theory of thermal explosion according to N. S. Semenov (Ref. 7: Zh, Uspekhi fiz. nauk, RPKhO, 60, 241, 1928; 23, 251 1940). On the other hand, the decomposition of Tetryl has an autocatalytic course and leaves a very large condensed residue. Tetryl is a good example for the quasisteady theory of thermal explosion developed by the authors (Ref. 6: A. G. Merzhanov, F. I. Dubovitskiy, Dokl. AN SSSR, 124, 362, 1959; Ref. 9: same authors, Dokl. AN SSSR, 120, 1068, 1958; Zh. fiz. khimii, 34, 2235, 1960). The investigation method had been elaborated previously (Ref. 2: A. G. Merzhanov, V. G. Abramov, F. I. Dubovitskiy, Dokl. AN SSSR, 123, 1238, 1959) and was only completed by a device for the intermixing of the substance. This method permits a determination of all fundamental characteristics of thermal explosion. In Table 1, the experimental results

Card 2/5

27685
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Thermal explosion in the liquid phase ... B106/B110

on the thermal explosion of Dina are compared with the values calculated according to Semenov's theory; they agree well. The data for the calculations were obtained independently of the experiments. Table 2 gives a comparison of results of experimental investigation of the thermal explosion of Tetryl with the critical temperature and heating calculated by means of the equations derived in Ref. 6 and Ref. 9. Also in this case, the agreement is good. D. A. Frank-Kamenetskiy (Ref. 1: Diffuziya i teploperedacha v khimicheskoy kinetike (Diffusion and heat transfer in chemical kinetics), M.-L., 1947) is mentioned. There are 2 figures, 2 tables, and 9 references: 7 Soviet and 2 non-Soviet-bloc. The two references to English-language publications read as follows: A. J. B. Robertson, Third Symposium on Combustion, 1949, 545; W. G. Chute, K. G. Herring, L. E. Toombs, G. F. Wright, Canad. J. Res., B26, 89, 1948.

ASSOCIATION: Akademiya nauk SSSR, Institut khimicheskoy fiziki
(Academy of Sciences USSR, Institute of Chemical Physics)

SUBMITTED: February 5, 1960

Card 3/5

11.7100

44559
S/020/63/148/001/031/032
B101/B186

AUTHORS: Merzhanov, A. G., Abramov, V. G., Gontkovskaya, V. T.

TITLE: Rules for the transition from self-ignition to ignition

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 148, no. 1, 1963, 156-159

TEXT: A theoretical investigation of an unsteady temperature field within a cylindrical system, made to determine the boundaries of self-ignition and the transition to ignition, is reported. It is assumed that the initial temperature of the system is lower than that of the ambient medium, that the temperature at the system surface is constant, and that the reaction is of zeroth order. The starting point is the equation:

$$\partial\theta/\partial\tau = \exp[\theta/(1 + \beta\theta)] + (1/\delta)(\partial^2\theta/\partial\xi^2 + \partial\theta/\partial\xi); 0 \leq \xi \leq 1; 0 \leq \tau < \infty.$$

The initial and the boundary conditions are: $\theta(\xi, 0) = -\theta_0$; $\theta(1, \tau) = 0$;

$$\partial\theta/\partial\xi|_{0, \tau} = 0, \text{ where } \theta = (E/RT_0^2)(T - T_0); \xi = x/r; \tau =$$

$$(Q/cQ)(E/RT_0^2)k_0 \exp(-E/RT_0) \cdot t; \delta = (QE/\lambda RT_0^2)r^2 k_0 \exp(-E/RT_0); \beta = RT_0/E;$$

Card 1/4

Rules for the transition from ...

S/020/63/148/001/031/032
B101/B186

$\theta_0 = (E/RT_0^2)(T_0 - T_{in})$; x = radial coordinate (cm); t = time (sec);
 $T(x,t)$ = temperature ($^{\circ}\text{K}$); T_0 = temperature of the medium ($^{\circ}\text{K}$); T_{in} =
 initial temperature of the system ($^{\circ}\text{K}$); r = radius of the cylinder (cm);
 E = energy of activation (cal/mole); Q = heat effect of the reaction
 (cal/cm³), λ = coefficient of thermal conductivity (cal/cm·sec·deg);
 c = specific heat (cal/g·deg); ρ = density (g/cm³); the dimension of the
 factor k_0 is sec⁻¹. δ is the criterion by Frank-Kamenetskiy (ZhFKh, 13,
 738 (1939)) which is the most important of the dimensionless parameters
 (δ , θ_0 , and β) used for determining the position of the self-ignition
 limits; θ_0 characterizes the thermal head; the parameter β only slightly
 effects the system. The differential equation was split up into a system
 of finite-difference equations. The temperature distribution as a
 function of the time and the parameters was calculated by computer. In
 all calculations, $\beta = 0.03$ was assumed, the other parameters were varied:
 $0 < \delta < 1000$; $0 < \theta_0 < 16$. Results: (1) For $\delta \sim \delta_{crit}$, all points of the

Card 2/4

Rules for the transition from ...

S/020/63/148/001/031/032
B101/B186

system are simultaneously heated to the temperature of the medium, the temperature maximum during the entire process of heating is in the center (on the cylinder axis), hence inflammation is initiated. (2) Noncontemporary heating sets in with rising δ , a temperature maximum develops near the surface and migrates to the center. If δ is not very large, the thermal wave reaches the center and inflammation sets in as in the case of (1). If δ is large, inflammation occurs before the thermal wave has reached the center. If δ is very large, inflammation occurs near the surface and the temperature of the center remains unchanged. (3) With increasing heating, the abscissa of the maximum approaches a value δ_{crit} . Self-ignition sets in at δ_{crit} , but only in the narrow range $\delta_{crit} < \delta < \delta'_{crit}$, where $\delta_{crit} = 2.07$ and $\delta'_{crit} = 12.0 - 12.5$ according to J.R. Parks (J.Chem.Phys., 34,46 (1961)). For $\delta > \delta'_{crit}$, δ_{expl} with increasing δ , asymptotically approaches the curve $\delta_{expl} = 1 - \text{const}/\sqrt{\delta}$, which describes ignition. (4) In the range $0 < \theta_0 < 16$, $0 < \delta < 12$, the equations $\tau_h = 0.48\theta_0^{0.22}\delta^{0.85} - 0.6/\theta_0$;

Card 3/4

ABRAMOV, V.I.

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(Leningrad).

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1. Iz Voenno-meditsinskoy akademii im. S.M.Kirova.
(Liver--Tumors)

ABRAMOV, V.I.

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ABRAHOV, V. I. and KRYUKIN, K. M.

Kliuchi s reguliruemym krutiashchim momentom. (Vestn. Mash., 1949, no. 4, p. 69-71)

Keys with adjustable torque.

DIC: TMh.Vh

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

ELIOVICH, L.I.; ABRAMOV, V.I., redaktor; NADWINSKAYA, A.A., tekhnicheskii
redaktor

[Signaling, interlocking, and block system in Mine Number 2-7] STaB
na shakhte no.2-7. Moskva, Ugletekhizdat, 1954. 17 p. (MLRA 8:3)
(Mine railroads) (Railroads--Signaling)

KLIOVICH, L.I.; ~~ABRAMOV~~, V.I., otvetstvennyy redaktor; IL'INSKAYA, G.M.,
tekhnicheskiiy redaktor

[Machine maning a drift] Mashina prokhodit shtrek. Moskva, Ugle-
tekhnizdat, 1954. 41 p. (MLRA 8:6)
(Coal mining machinery)

ZENIN, I.; ~~ABRAHOV, Y.I.~~ redaktor; NADEINSKAYA, A.A., tekhnicheskiy
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[Machine operators of the Gorskaya No.1-2 mine] Mekhanisatsiya
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(MLRA 8:4)

(Donets basin--Coal mining machinery)

IVANOV, A.A.; ABRAMOV, V.I., otvetstvennyy redaktor: ALADOVA, Ye.I.,
tekhnicheskiy redaktor.

[Mechanisation and automatic equipment in mine surface operations]
Mekhanizatsiia i avtomatizatsiia poverkhnosti shakht. Moskva, Ugle-
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IVANOV, K.I.; MERKULOV, N.Ya.; SOSNOV, V.D., redaktor; ABRAMOV, V.I.,
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[Work practice in operating UKT-1 cutter-loaders in mines of the
Voroshilovgradcoal Combine] Opyt ekspluatatsii kombainov UKT-1 na
shakhtakh kombinata Voroshilovgradugol'. Moskva, Ugletekhisdat, 1954.
75 p. (Coal-mining machinery) (MLRA 8:1)

ABRAMOV, V. I.

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redaktor; PROZOROVSKAYA, V.O., tekhnicheskiy redaktor.

[Booklet for operators of mine ventilation installations] Pamiatka
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ABRAMOV, V.I.

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redaktor; PROZOROVSKAYA, V.L., tekhnicheskii redaktor.

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ZVEREV, Il'ya; SEMENOV, R., redaktor; ABRAMOV, V.I., redaktor; IL'INSKAYA,
G.M., tekhnicheskii redaktor

[A miner's personality] Shakhterskii kharakter. Moskva, Gos. nauchno-
tekhn. izd-vo li .ry po ugol'noi promysh., 1955. 59 p. (MLRA 8:7)
(Vorona, Grigori)

ABRAMOV, V., inzhener.

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(Mine management)

16 000000 003

AUTHORS: Deych, M.Ye., Doctor of Technical Sciences, SOV/96-58-5-2/27
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 Kazintsev, F.V., Abramov, V.I., Engineers

TITLE: Comparative Tests on a Two-row Velocity Stage (Sravnitel'-
 nyye issledovaniya dvukhveneknykh stupeney skorosti)

PERIODICAL: Teploenergetika, 1958, Nr 5, pp 9 - 16 (USSR).

ABSTRACT: Work done at the MEI (Moscow Power Institute) has led to the development of several two-row velocity wheels. One of these, stage KS-1A, was thoroughly tested in the experimental steam turbine of the Moscow Power Institute. The experimental procedure and test result were described in an article in Teploenergetika, 1957, Nr 5. They relate to a wheel with a mean diameter of 400 mm and a nozzle height of 15 mm and another with a diameter of 534 mm and height of 20 mm. Tests were also made on a stage, type KS-1A-3, with a wheel diameter of 668 mm and nozzle height of 25 mm. Curves of the internal efficiency of this stage with full steam supply are given in Figure 1. Thus, test results were obtained on three identical stages with constant d/l ratio and different absolute values of d and l . As will be seen from the table, the area ratios differed for each stage and this affected the stage reaction to some extent. Graphs of the mean total reaction for velocity stage

Card 1/5

Comparative Tests on a Two-row Velocity Stage SOV/96-58-5-2/27

KS-1A are given in figure 2. The results of the tests on the three stages are then compared. The effect of blade height on stage efficiency is shown in Figure 3. It is of particular interest to compare the results for the new stages with best Soviet and foreign practice. Therefore, a detailed investigation was made of a two-row stage, type Nr 113, manufactured by the LKZ. The dimensions and clearances of stages KS-1A-3 and stage Nr 113 are given in dimensioned sketches, figure 4. Test results for stage nr 113 with full steam supply are given in Figure 5. The maximum internal efficiency was 71%; the total mean reaction of the stage, plotted in Figure 6, is in practically linear relationship with the velocity ratio and increases with increase of the heat drop on the stage. The steam consumption of stage nr 113 is plotted in figure 7. Tests were also made with different axial gaps. When the axial gap between the outlet edge of the nozzle and the inlet edges of the working blades of the first row is altered from 2.5 to 5.5 mm, the stage efficiency falls, as shown in Figure 8. The tests were made with the radial and all other axial gaps constant.

Card2/5

Comparative Tests on a Two-row Velocity Stage SC7/96-58-5-2/27

Investigations were then made on stage Nr 113 with steam supplied over only part of the arc; the gaps were unchanged and no special shields were used. The effect of partial steam-supply on the internal efficiency is shown graphically in Figure 9 and data on the mean total stage reaction are given in Figure 10. It follows from the results that different procedures should be used in selecting the design stage reaction for full and for partial steam supply. Velocity stages with expanding nozzles are used for operation at high supersonic drops. Two-row stages with expanding nozzles were investigated. One had the same working and guide blades as type Nr 113 with contracting nozzles as described above; the other had straighter-bladed guide vanes similar in shape to those of a compressor. The blade geometry is discussed.

The graph of internal efficiency for stage Nr 113 with expanding nozzles and full steam supply is given in Fig 11. The efficiency is appreciably lower than for a stage with contracting nozzles. The efficiency and test results of different velocity stages are then compared, noting, however that the procedures are still

Card 3/5

88V/96-58-5-2/27

Comperative Tests on a Two-row velocity Stage

insufficiently developed. Even stages tested in one and the same turbine differ in their geometrical characteristic in a way which affects the efficiency. Various methods are used in this article to compare velocity stages, internal efficiency curves with full steam supply for all stages are shown in figure 12: all stages were tested in the same experimental turbine, using the same procedure. The best results were obtained with the Moscow Power Institute stage KS-1A-3 with a mean wheel diameter of 668 mm and a nozzle height of 25 mm. Here, the maximum efficiency is 81% but cannot be compared directly with stage Nr 113 because of the considerable difference in dimensions. However, if the curves of the KGTZ (Khar'kov Turbo-generator Works) are used to recalculate the results for stage Nr 113 to the dimensions of stage KS-1A-3, its efficiency is increased by only 2.5% and becomes 73.8%. The stage efficiencies of different wheels are then discussed; the internal efficiencies of velocity stages KS-1A-2 (with welded diaphragm) and of stage Nr 113 as a function of nozzle area are given in Figure 13. Throughout the range, the efficiency of stage KS-1A-2 is higher.

Card 4/5

Comparative Tests on a Two-row Velocity Stage SOV/96-58-5-2/27

It is concluded that stage Nr 113 is of satisfactory efficiency under sub-critical conditions but beyond this it drops markedly and is still worse with expanding nozzles. However, the Moscow Power Institute stage KS-1A with a nozzle height of 25 mm and a diameter of 668 mm had the very high maximum internal efficiency of 81%, which confirmed the high efficiency of this combination at a low degree of reaction. Stage KS-1A was better than stage Nr 113 in efficiency and stability, particularly with partial steam supply. It should be borne in mind that stage Nr 113 is more carefully manufactured and has assembled milled nozzles, whereas stage KS-1A was tested with a welded diaphragm. There are 13 figures, 1 table and 1 Soviet reference.

ASSOCIATION: MEI

Card 5/5

1. Turbine wheels--Design
2. Turbine wheels--Test results
3. Turbine wheels--Effectiveness

ABRAMOV V.I.

ALEKSANDROV, B.F., inzh.; BALKOV, V.M., inzh.; BARANOVSKIY, P.I., inzh.;
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SHIPIL'BERG, I.L., inzh.; SHORIN, V.G., dotsent, kand.tekhn.nauk;
SHTOKMAN, I.G., doktor tekhn.nauk; SHURIS, N.A., inzh.; TERPIGOREV,
A.M., glavnyy red.; TOPCHIEV, A.V., otv.red.toma; LIVSHITS, I.I.,
zamestitel' otv.red.; ABRAMOV, V.I., red.; LADYGIN, A.M., red.;
MOROZOV, R.N., red.; OZERNOY, M.I., red.; SPIVAKOVSKIY, A.O.,
red.; FAYBISOVICH, I.L., red.; ARKHANGEL'SKIY, A.S., inzh., red.;

(Continued on next card)

ALEKSANDROV, B.F.---(continued) Card 2.

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TITLE: An Investigation of a Series of Single-row Stages
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ABSTRACT: A number of types of nozzle and working blading for turbines have been developed in the Moscow Power Institute. These can be combined in various ways in single- and two-row stages. Tests results on a number of two-row velocity stages have already been published in Teploenergetika, 1958, Nr 5. Six combinations of single-row stages were made up of blading intended for operation at subsonic and sonic velocities. The stage combinations consisted of two nozzle and three working blades. All the stages were 534 mm diameter, 25 mm nozzle blade height and 28 mm working blade height and were all of the same width. A stage diagram is given in Fig.1. The experimental steam turbine and the procedure used were the same as described in Teploenergetika, 1957, Nr 5. Particulars of the stages

Card 1/4

SOV/96-09-4-7/21

An Investigation of a Series of Single-row Stages

tests are tabulated. The stages were first tested with full steam supply. Experimental internal efficiency data for stage KD-2-2A are given in Fig.3. Where high supersonic speeds are used the blading losses increase and the stage efficiency is reduced. Fig.3 gives losses in nozzle blading TS-2A and the internal efficiency of stage KD-2-2A. Mean reaction curves for stage KD-2-2A are given in Fig.4. Internal efficiency curves for all six combinations investigated are given in Fig.5 and the results are discussed. Stage KD-2-2A was then tested with partial steam supply. Curves of the relative internal efficiency of the stage are given in Fig.6. Internal efficiency curves for the stage with different angles of steam delivery are given in Fig.7. It will be seen that the stage efficiency is much reduced with partial steam supply. This and other test results are discussed and are stated to be fully in accordance with theoretical expectations. The influence of nozzle diaphragm widths on stage efficiency of KD-2-1A was then investigated and

Card 2/4

S07/96-59-4-7/21

An Investigation of a Series of Single-row Stages

the results are given in Fig.8. It is clearly shown that the stage efficiency falls off with a wide diaphragm and this is because the tests were made outside the zone of best width. The efficiencies of single- and two-row stages are then compared. The test results for two such stages are given in Fig.10 and show the conditions under which one or other of the two regulating stages should be selected. The number of unregulated stages and other constructional features of a machine vary considerably depending on the type of regulating stage used. A detailed analysis of this problem falls outside the scope of the present article. It is concluded that the single-row stages investigated are of high efficiency, particularly the stages KD-2-2A and KP-1-2A. If the gaps are right and the blading is correctly chosen a small negative reaction has little influence on the efficiency of a single row stage with short blades. On the basis of the tests it is considered that for the high and medium pressure cylinders of turbines the best two combinations are KD-2-2A and KD-1-2A composed of blade profiles TS-2A, TR-2A, TS-1A and TR-2A. Investigations on stage KD-2-2A with partial

Card 3/4

NOV/90-59-4-7/21

An Investigation of a Series of Single-row Stages

steam supply and various numbers of nozzles showed that the important effect of additional losses and secondary effects associated with partial steam supplies. Comparison of single- and two-row stages made of the new improved blade profiles shows that the difference between the possible highest efficiency of these stages has been reduced and the field of application of a velocity stage has been extended. There are 10 figures, 1 table and 2 Soviet references.

ASSOCIATION: Moskovskiy Energeticheskiy Institut (Moscow Power Institute)

Card 4/4